Department of Horticultural Science

Horticulture Information Leaflet 618

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FERTILIZING DECIDUOUS SHADE TREES IN THE LANDSCAPE

M. A. (Kim) Powell, Extension Horticultural Specialist

Shade trees, like any other landscape plants, will respond to fertilization. Most shade trees exist in nature without much care, but transplanting trees into urban areas or man-made conditions can create problems. Often these trees will be growing in restricted root zone areas, be surrounded by pavement or compacted soil or be physically damaged by construction activities. One should realize that the root system is just as important (and delicate) as the above-ground parts. Fertilizer will not improve the health of a tree stressed by one of these environmental conditions. Fertilizer is only one factor in the complex formula of plant requirements. The following are general recommendations for the timing, methods and rates of applying fertilizer to shade trees.

One should be able to detect when a tree needs fertilizing. Symptoms of a nutrient deficient tree include a slow rate and low amount of annual growth on twigs and trunk, smaller than normal foliage, off-color foliage, increased amounts of dead branches, tip die-back in branches, and increased rates of disease and insect problems. Trees that possess these symptoms generally would respond to a fertilization treatment. One should make sure that nutrients (or lack of) are the problem before fertilizing. Other common tree disorders to be aware of in urban areas would include poor planting techniques, moisture problems, construction damage, girdling roots, or utility leaks from a natural gas line or sewer line. Soil testing is highly recommended in questionable situations.

Soil Testing – Before selecting a fertilizer take a soil test. Take several soil samples from the area, 6 to 8 inches deep, using a soil sampling tube. Cores should be collected in a clean pail and mixed thoroughly. A soil test will reveal what situations exist and give a recommendation for adjusting nutrient levels. Soil pH should be considered also. Generally a pH range of 5.2 to 6.2 is the most desirable. More acid soils should be limed to raise the pH while more basic soils should be treated with sulfur to adjust the pH downward. Maintaining a soil pH range of 5.2 to 6.2 for shade trees generally insures that the availability of essential plant nutrients will be available to the tree.

Fertilizer Types – When selecting a fertilizer, urchase complete ratio fertilizer. Nitrogen is a principal plant nutrient, and is important in production and maintenance of color in the foliage. Using the proper amount is important since overdoses can result in root injury while lack of nitrogen may result in poor vegetative growth.

Ratio of nitrogen to the other two major nutrients, phosphorus and potassium, should be approximately two or three times higher. Fertilizers which can be used include 10-5-5, 12-6-6, and 18-6-12. Several of these fertilizers contain both the urea formaldehyde and nitrate form of nitrogen, which allows for

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